

Falls prevention

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Welcome and housekeeping



Ground rules

- Get involved - give 100 percent
- Keep side conversations to a minimum
- Listen actively to, show respect for the thoughts and ideas of your colleagues
- It is ok to respectfully challenge
- Share you own experiences, not someone else's

Workshop outline

- Introduction
- Expert presentation
- Case study
- Identifying causes of falls
- Changes to practice and close

Aim

The overall aim of this programme is to develop your knowledge and skills to help you manage and optimise care for patients who are at risk of having a fall.

Learning outcomes

At the end of this workshop and associated learning you will be able to:

- describe the role of pharmacy professionals in prevention of falls
- identify the factors that contribute to the increased risk of falls
- identify people at risk of falls and provide solutions to reduce this risk through lifestyle and medicine interventions
- explain how you can utilise your knowledge in falls prevention to better support your patients

Warm up: Meet your neighbour!

- Take 5 minutes to turn to the person next to you and say “Hello!”
- Introduce yourself and briefly highlight the area in which you work
- Think about sharing the following:
 - Why you have attended tonight
 - Anything you hope to gain from the session
 - How confident are you to support patients with falls prevention



Falls frequency

In the time it takes you to read this slide, an elderly person living in the UK will have had a fall

6.44 Seconds

O'Loughlin, Jennifer L., et al. "Incidence of and risk factors for falls and injurious falls among the community-dwelling elderly." *American journal of epidemiology* 137.3 (1993): 342-354.

Complications...

Every thirty seconds an elderly person has a fall serious enough to call out an ambulance



O'Loughlin, Jennifer L., et al. "Incidence of and risk factors for falls and injurious falls among the community-dwelling elderly." *American journal of epidemiology* 137.3 (1993): 342-354.

Falls in Bristol

- For all people over 65 there were 2700 emergency hospital admissions due to falls per 100,000 population in Bristol in 2017/2018.
- This is compared to the England figure of 2170.

The problem with falls

- Around 30% of over 65's living at home will experience at least 1 fall a year
- This rises to 50% of over 80's either at home or in care.
- Incidence of falls in care & in hospitals is 2 to 3 times higher
- Falls are one of the leading causes of morbidity and death caused by injury in people over 75.
- Falls are estimated to cost the NHS alone more than £2.3 billion per year
- Unaddressed falls hazards in the home are estimated to cost the NHS in England £435m

Ruth Cowell

Falls Specialist Nurse
Bristol Community Health

Risk factors for falls

- Reduced muscle strength
- History of falls
- Difficulty with gait or balance
- Use of assistive devices
- Medications
- Visual problems
- Neurological impairment
- Heart rate & rhythm
- Postural hypotension
- Vestibular
- Feet & footwear
- Environmental hazards
- Cognitive/depression
- Fear of falling
- Urinary symptoms/continence
- Environment
- Osteoporosis

Cycle



Vision & Hearing

- Bifocals/Varifocals - ↑ falls risk
- Consider single vision lens especially if regular outdoor walking.
- Annual eye checks and hearing tests
- Correct impairments e.g. cataract surgery

Using toilet at night

- Clear path
- Lighting
- Dizziness on rising – take time
- Walking aid/grab rails/toilet raise/commode
- Take lifeline/mobile phone

Feet & Footwear

- Avoid slip on shoes
- Avoid smooth leather soles
- Avoid sloppy slippers
- Avoid heels



- Painful feet?
- Stiffness in toes and ankles?
- Toe nail disorders?
- Foot and toe weakness/deformities e.g. bunions, claw toes
 - podiatrist, chiropodist
 - orthotist
 - pain relief
- Sensation in feet
 - monitor if diabetic
 - take extra care when walking



Safety in the home

- Clutter, Rugs/mats
- Furniture in the way
- Lighting, esp. at night
- Handrails, non-slip bath mat
- Access to toilet in the night
- Long nighties/dressing gowns
- Carpet strips and door sills
- Trailing cables, dog toys/grand-children's toys!!



Safety outside the home

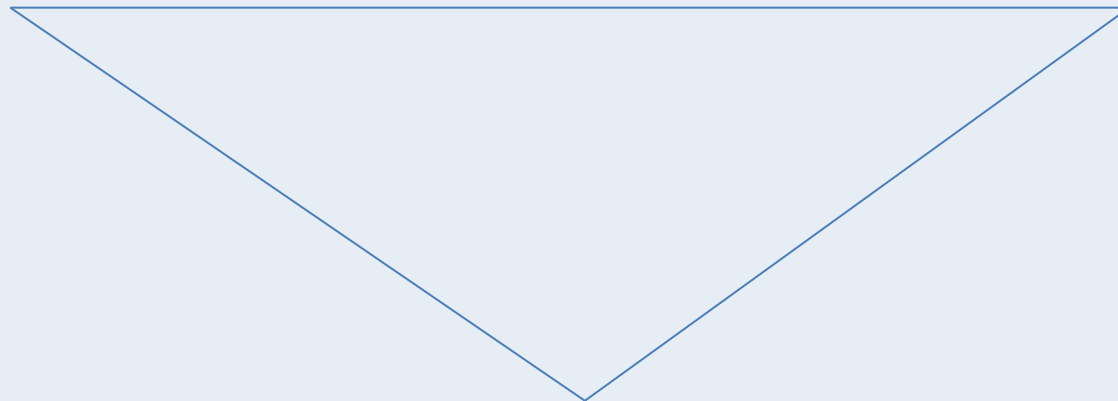
- Pathways clear of slippery leaves
- Good condition of ferrules if using a stick/crutch
- Care taken on steps – are there sufficient rails?
- Uneven ground and kerbs - beware
- Pathways well lit
- Pacing of gardening and other outdoor activities with somewhere close by to rest of needed.
- Suitable height stool/seat and way of getting up if you kneel down
- Take lifeline into garden with you.
- Take a mobile phone with you and know how to contact help



What can the pharmacy team do?

Stay safe at home
(and hospital)

Early
identification/prevention



Access to specialist treatment and rehabilitation

Medical issues putting patients at risk of falls

- Sedation and drowsiness
- Dehydration
- Confusion
- Hypothermia
- Impaired balance and stability
- Hypoglycaemia
- Visual impairment (dry eyes and/or blurred vision)
- Parkinson like symptoms
- Orthostatic hypotension
- Tinnitus/deafness

Side effects

Why are older people more likely to suffer from the side effects of medicines?

- Altered pharmacokinetics:
 - Liberation and absorption - slower rate of absorption
 - Distribution - changes in body fat/lean body mass
 - Reduced cardiac output
 - Metabolism – reduced hepatic blood flow
 - Elimination - impaired kidney function
- Brain/blood barrier

Drugs causing sedation and drowsiness

- Sedatives and hypnotics
- Tricyclic antidepressants
- SSRI (hyponatraemia)
- Anti-psychotics
- Parkinson's disease medication
- Opiates
- Antihistamines

Cardiovascular medication

Medicine group	Examples
Alpha receptor blockers	Doxazosin, indoramin, tamsulosin
Centrally acting alpha 2 receptor agonists	Clonidine, moxonidine
Thiazide diuretics	Bendroflumethiazide , Chlortalidone
Loop diuretics	Furosemide, bumetanide
ACE inhibitors	Lisinopril, ramipril, enalapril , captopril, perindopril, fosinopril, trandolapril, quinapril
Beta blockers and antianginals	Atenolol, bisoprolol propranolol GTN, ISMN , nicorandil
Anti-arrhythmics	Digoxin, flecainide, amiodarone

Anticholinergics

Many of the medicines prescribed to older people have anticholinergic effects.

Scores of anticholinergic burdens can be found on www.acbcalc.com

For each point increase in ACB, a decline in MMSE (Mini-Mental State Exam) score of 0.33 points over two years has been suggested.

Each one point increase on total score has shown correlation with a 26 percent increase in risk of death.

Other conditions caused by medicines

- Antipsychotics: drug-induced Parkinsonism
- Antihistamines/drugs for urinary incontinence: visual impairment
- Vestibular damage/ tinnitus/deafness: diuretics, aspirin, quinine and certain antibiotics
- Laxatives: dehydration

Medication review

- All patients should have their medicines burden reviewed with respect to its propensity to cause falls.
- The history should establish the reason the medicine was given, when it started, whether it is effective and what its side effects have been.
- An attempt should be made to reduce the number and dosage of medications and ensure they are appropriate, and not causing undue side effects.

Activity 1- Case study Paul Johnson

Mr Paul Johnson

Paul Johnson is 78 years old. Paul recently attended the emergency department following a fall, and he left with a big bag of medicines. He feels he is taking too many medicines and would like your advice.

Social history: Paul lives alone in a house, his wife died 18 months ago, he has no formal package of care but his daughter lives nearby. He mobilises using a Zimmer frame.

Past medical history: includes hypertension, type 2 diabetes, BPH (benign prostatic hypertrophy), age-related macular degeneration and osteoarthritis.

Question 1

How would you define a fall?

- A fall is defined as an event which results in a person coming to rest inadvertently on the ground or floor or other lower level (WHO definition).
- A move from a higher to a lower level, typically rapidly and without control.
- (Of a person) to lose one's balance and collapse.

Question 2

When speaking to Paul about his medicines, he tells you he takes his medicines as prescribed.

Which of Paul's medicines could have contributed to his falls risk?

Answers

Amlodipine

Amitriptyline

Codeine

Bendroflumethiazide

Furosemide

Gliclazide

Morphine sulphate oral sol[^]

Omeprazole

Paracetamol

Ramipril

Sertraline

Tamsulosin

Zopiclone

Question 3

By what mechanism could each of these medications precipitate a fall?

Medicine	Mechanism of action of medicine	Mechanism precipitating fall
Amlodipine	Calcium channel blocker	Dizziness, fatigue, arthralgia, myalgia, oedema, syncope
Amitriptyline	Anticholinergic	Extrapyramidal side effects, blurred vision, confusion, constipation, dizziness, drowsiness
Codeine	Opioid	Confusion, constipation, dizziness, drowsiness, hallucinations, hypotension
Bendroflumethiazide	Thiazide diuretic	Electrolyte disturbance, postural hypotension, dizziness
Furosemide	Loop diuretic	Urinary retention, electrolyte disturbance, postural hypotension (urinary frequency)
Gliclazide	Sulphonylurea	Hypoglycaemia (confusion, drowsiness)

Morphine sulphate oral solution	Opiate	Bradycardia, confusion, constipation, dizziness, drowsiness, hallucinations, hypotension (larger doses), postural hypotension, sleep disturbances, urinary retention, urticaria, vertigo, visual disturbances
Ramipril	ACE inhibitor	Dizziness, electrolyte disturbance, postural hypotension
Sertraline	Selective Serotonin Reuptake Inhibitor	Hyponatraemia, dizziness
Tamsulosin	Alpha blocker	Postural hypotension
Zopiclone	Sedative	Dizziness, drowsiness, confusion, incoordination, light headedness, sleep walking, hallucinations

Question 4

Paul would like to reduce the number of medicines he takes every day. Which medicines would you want to review?

Consider:

- What questions would you ask Paul?
- How would you discuss this with Paul?



Medicines

1. Antihypertensives
(**Amlodipine, Ramipril**)

2. Diuretics
(**Bendroflumethiazide,
furosemide**)

3. Analgesia – (**Codeine,
oramorph**)

4. Anti-diabetic
(**Gliclazide**)

5. Is **Tamsulosin** still
required?

6. **Zopiclone**

Question 5

Would there be any other changes or additions to Paul's medicines that could help prevent a fall?

- Alternative analgesia – regular paracetamol, topical capsaicin
- Melatonin as alternative to zopiclone
- Bone protection – the patient has had a fragility fracture so check vitamin D levels and consider vitamin D/Calcium and bisphosphonate

Activity 2 - Identifying causes of falls

- One example patient
- Limited information on the patient

Working in your groups, consider four questions for this person.

Identifying risks

Question 1:

What clues do the following prescriptions give you about the patient's fall risk?

Question 2:

What medicines would you be concerned about supplying?

Question 3:

What key things would you discuss with the patient to establish the extent of the risk?

Question 4

What recommendations might you discuss with the prescriber?



1. Violet Swallow

Violet Swallow is 79 years old . Violet is a retired teacher and lives with her husband. They have lived in the family house for the last 40 years. Violet's husband cares for her and there is no package of care in place.

- Digoxin 250 micrograms - one tablet daily
- Furosemide 20 mg - one tablet daily
- Bisoprolol 5 mg - one tablet daily



Changes to practice

Take the next five minutes to reflect on the evening and think about how you can change your practice following this learning.

Write down one thing on a sticky note that you will action.



Supporting your work

How to link and support HLP:

- out reach - visit local care homes and speak to them about falls risks and simple measures to help (exercise, bone health, footwear, etc)
- health promotion zone on fall prevention

Medication reviews:

- increasing the effectiveness
- better patient outcomes
- MDT working



Supporting your work

- Identify your own learning gaps.
- Share learning from this evening with colleagues.
- Enhance your learning on falls prevention
- Identifying patients who are at risk.



Upcoming CPPE event

- NHS Community Pharmacist Consultation Service (CPCS): Clinical assessment – Essential skills workshop
 - Sunday 3rd November, 9.30am to 4.30pm
 - Doubletree by Hilton Bradley Stoke
 - Event ID: 49584

Book your place online now!

